;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; FIle name = "temp\_loop.ncl"

; Distribution of Surface temperature & Salinity in Wando Sea

; Made by Kim.Young.Min of Chonnam National Universtiy

; Date by 2017.09.03

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/gsn\_code.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/gsn\_csm.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/contributed.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/shea\_util.ncl"

setvalues NhlGetWorkspaceObjectId()

"wsMaximumSize" : 100000000

end setvalues

begin

minlon = 126.0222

maxlon = 127.7278

minlat = 33.8611

maxlat = 34.6389

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Read data

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

f\_in = addfile("WANDO\_HYDR\_2017042500.nc","r")

printVarSummary( f\_in )

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Read Time

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

time = f\_in->time(0:29)

time@units = "seconds since 2005-01-01 00:00:00"

utc\_date = ut\_calendar(time, 0)

utc\_yyyy = tointeger(utc\_date(:,0))

utc\_mm = tointeger(utc\_date(:,1))

utc\_dd = tointeger(utc\_date(:,2))

utc\_hh = tointeger(utc\_date(:,3))

;utc\_hh1 =utc\_hh + 9 ; KST + 9

date\_str = sprinti("%0.4i-", utc\_yyyy) + sprinti("%0.2i-", utc\_mm) + \

sprinti("%0.2i ", utc\_dd) + sprinti("%0.2i:00 KST", utc\_hh)

print(date\_str)

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Read Temperature

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

temp = f\_in->temperature

temp@units = "degC"

temp@\_FillValue = -9.899999e+15

printVarSummary( temp )

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Read Salinity

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

sal = f\_in->salinity

sal@units = "PSU"

sal @\_FillValue = -9.899999e+15

printVarSummary( sal )

ndim = dimsizes( temp )

print( ndim )

dt = ndim(0)

dy = ndim(1)

dx = ndim(2)

do ii = 0,dt-1

date = sprinti("%0.4i", utc\_yyyy) + sprinti("%0.2i", utc\_mm) + \

sprinti("%0.2i", utc\_dd) + sprinti("%0.2i", utc\_hh)

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Temperature

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

res = True

wks = gsn\_open\_wks("png", "Wando\_temp\_"+ date(ii)+"")

gsn\_define\_colormap ( wks, "matlab\_jet")

;gsn\_reverse\_colormap(wks)

plot = new(1, graphic)

res = True

res@gsnFrame = False

res@gsnDraw = False

res@gsnAddCyclic = False

res@cnLevelSelectionMode = "ManualLevels"

res@cnFillOn = True

res@cnLinesOn = True

res@cnLineLabelsOn = True

res@cnLineLabelBackgroundColor = "white"

res@cnInfoLabelOn = False

res@cnMinLevelValF = 0.0

res@cnMaxLevelValF = 30.0

res@cnLevelSpacingF = 0.2

res@lbLabelStride = 5

res@cnLineLabelInterval = 1

res@cnLineLabelDensityF = 2

;res@cnFillDrawOrder = "PreDraw"

res@mpDataBaseVersion = "HighRes"

res@mpFillOn = True

res@mpOutlineOn = True

res@mpMinLatF = minlat

res@mpMaxLatF = maxlat

res@mpMinLonF = minlon

res@mpMaxLonF = maxlon

res@mpFillDrawOrder = "PostDraw"

res@lbBoxLinesOn = False

res@lbLabelBarOn = True

res@lbOrientation = "Vertical"

res@tmXTOn = False

res@tmYROn = False

res@tiMainString = ""

res@tiMainOffsetYF = 0.025

res@tiMainFontHeightF = 0.026

res@gsnRightString = ""+date\_str(ii)+""

res@gsnCenterString = ""

res@gsnLeftString = "SeaWater Temperature(~S~o~N~C) [depth : 00m]"

res@gsnStringFontHeightF = 0.015

res@gsnMinorLatSpacing =1

res@gsnMinorLonSpacing =1

plot(0) = gsn\_csm\_contour\_map(wks,temp(ii,10,:,:),res)

resP=True

resP@gsnPanelYWhiteSpacePercent = 3

resP@gsnPanelXWhiteSpacePercent = 5

gsn\_panel( wks, plot, (/1,1/),resP )

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; Salinity

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

res\_sal = True

wks\_sal = gsn\_open\_wks("png", "Wando\_sal\_"+ date(ii)+"")

gsn\_define\_colormap ( wks\_sal, "MPL\_YlGnBu")

;gsn\_reverse\_colormap(wks)

plot = new(1, graphic)

res\_sal = True

res\_sal@gsnFrame = False

res\_sal@gsnDraw = False

res\_sal@gsnAddCyclic = False

res\_sal@cnLevelSelectionMode = "ManualLevels"

res\_sal@cnFillOn = True

res\_sal@cnLinesOn = True

res\_sal@cnLineLabelsOn = True

res\_sal@cnLineLabelBackgroundColor = "white"

res\_sal@cnInfoLabelOn = False

res\_sal@cnMinLevelValF = 0.0

res\_sal@cnMaxLevelValF = 40.0

res\_sal@cnLevelSpacingF = 2

;res\_sal@lbLabelStride = 5

;res\_sal@cnLineLabelInterval = 1

;res\_sal@cnLineLabelDensityF = 2

;res@cnFillDrawOrder = "PreDraw"

res\_sal@mpDataBaseVersion = "HighRes"

res\_sal@mpFillOn = True

res\_sal@mpOutlineOn = True

res\_sal@mpMinLatF = minlat

res\_sal@mpMaxLatF = maxlat

res\_sal@mpMinLonF = minlon

res\_sal@mpMaxLonF = maxlon

res\_sal@mpFillDrawOrder = "PostDraw"

res\_sal@lbBoxLinesOn = False

res\_sal@lbLabelBarOn = True

res\_sal@lbOrientation = "Vertical"

res\_sal@tmXTOn = False

res\_sal@tmYROn = False

res\_sal@tiMainString = ""

res\_sal@tiMainOffsetYF = 0.025

res\_sal@tiMainFontHeightF = 0.026

res\_sal@gsnRightString = ""+date\_str(ii)+""

res\_sal@gsnCenterString = ""

res\_sal@gsnLeftString = "Salinity(PSU) [depth : 00m]"

res\_sal@gsnStringFontHeightF = 0.015

res\_sal@gsnMinorLatSpacing =1

res\_sal@gsnMinorLonSpacing =1

plot(0) = gsn\_csm\_contour\_map(wks\_sal,sal(ii,10,:,:),res)

res\_salP=True

res\_salP@gsnPanelYWhiteSpacePercent = 3

res\_salP@gsnPanelXWhiteSpacePercent = 5

gsn\_panel( wks\_sal, plot, (/1,1/),res\_salP )

end do ;;; end dt

end

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

; timeseries.ncl

; Export timeseire of temperature about 87 Hours

;\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/gsn\_code.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/gsn\_csm.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/contributed.ncl"

load "$NCARG\_ROOT/lib/ncarg/nclscripts/csm/shea\_util.ncl"

setvalues NhlGetWorkspaceObjectId()

"wsMaximumSize" : 100000000

end setvalues

lon = 126.8500

lat = 34.1833

f\_in = addfile("WANDO\_HYDR\_2017042500.nc","r")

printVarSummary( f\_in )

time = f\_in->time

time@units = "seconds since 2005-01-01 00:00:00"

utc\_date = ut\_calendar(time, 0)

yyyy = tointeger(utc\_date(:,0))

mm = tointeger(utc\_date(:,1))

dd = tointeger(utc\_date(:,2))

hh = tointeger(utc\_date(:,3))

utc\_hh1 =utc\_hh + 9 ; KST + 9

date= sprinti("%0.4i", yyyy) + sprinti("%0.2i",mm) + \

sprinti("%0.2i ", dd) + sprinti("%0.2i:00",hh)

temp = f\_in->temperature(:,10,{lat},{lon})

temp@units = "degC"

temp@\_FillValue = -9.899999e+15

printVarSummary( temp )

print( date )

res = True

wks = gsn\_open\_wks("png", "Tiemseires")

plot = new(1, graphic)

res = True

res@gsnDraw = False

res@gsnFrame = False

res@tmYROn = False

res@tmXTOn = False

res@vpWidthF = 0.9

res@vpHeightF = 0.3

res@tiYAxisString = "Temp"

res@tiXAxisString = "Time"

res@trXMinF = min( date(:) )

res@trXMaxF = max( date(:) )

res@trYMinF = 0

res@trYMaxF = 30

; res@trYReverse = True

res@gsnYRefLine = 0.0

res@gsnYRefLineColor = "black"

res@xyMarkLineMode = "Lines"

res@xyDashPattern = 0

res@xyLineThickness = 3.0

res@xyMarkers = 16

res@xyMarkerSizes = 5

res@xyLineColors = "red"

res@pmLegendDisplayMode = "Always"

res@pmLegendSide = "Bottom"

res@pmLegendOrthogonalPosF = 0.1

res@pmLegendParallelPosF = 0.85

res@pmLegendWidthF = 0.1

res@pmLegendHeightF = 0.1

res@xyExplicitLegendLabels = (/" Mean Temp", " Mean Pressure"/)

res@lgPerimOn = True ; turn off box around

res@lgPerimThicknessF = 2.0

res@lgLabelFontHeightF = 0.02 ; label font height

res@lgPerimFill = "SolidFill"

res@lgPerimFillColor = "white"

resP = True

resP@gsnPanelFigureStrings= (/"A","B"/)

resP@amJust = "TopLeft"

plot(0) = gsn\_csm\_xy( wks, date(:), temp(:), res )

resP=True

resP@gsnPanelYWhiteSpacePercent = 3

resP@gsnPanelXWhiteSpacePercent = 5

gsn\_panel( wks, plot, (/1,1/),resP )